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Academic Integrity through e-authentication and authorship verification for e-assessment: impact study

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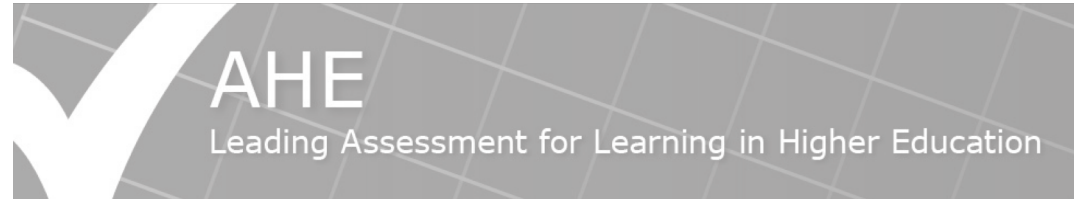


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Academic Integrity through e-authentication and authorship verification for e-assessment: impact study

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OUTLINE

1. The Open University
2. Evaluation framework
3. Participants
4. Procedure
5. Outcomes

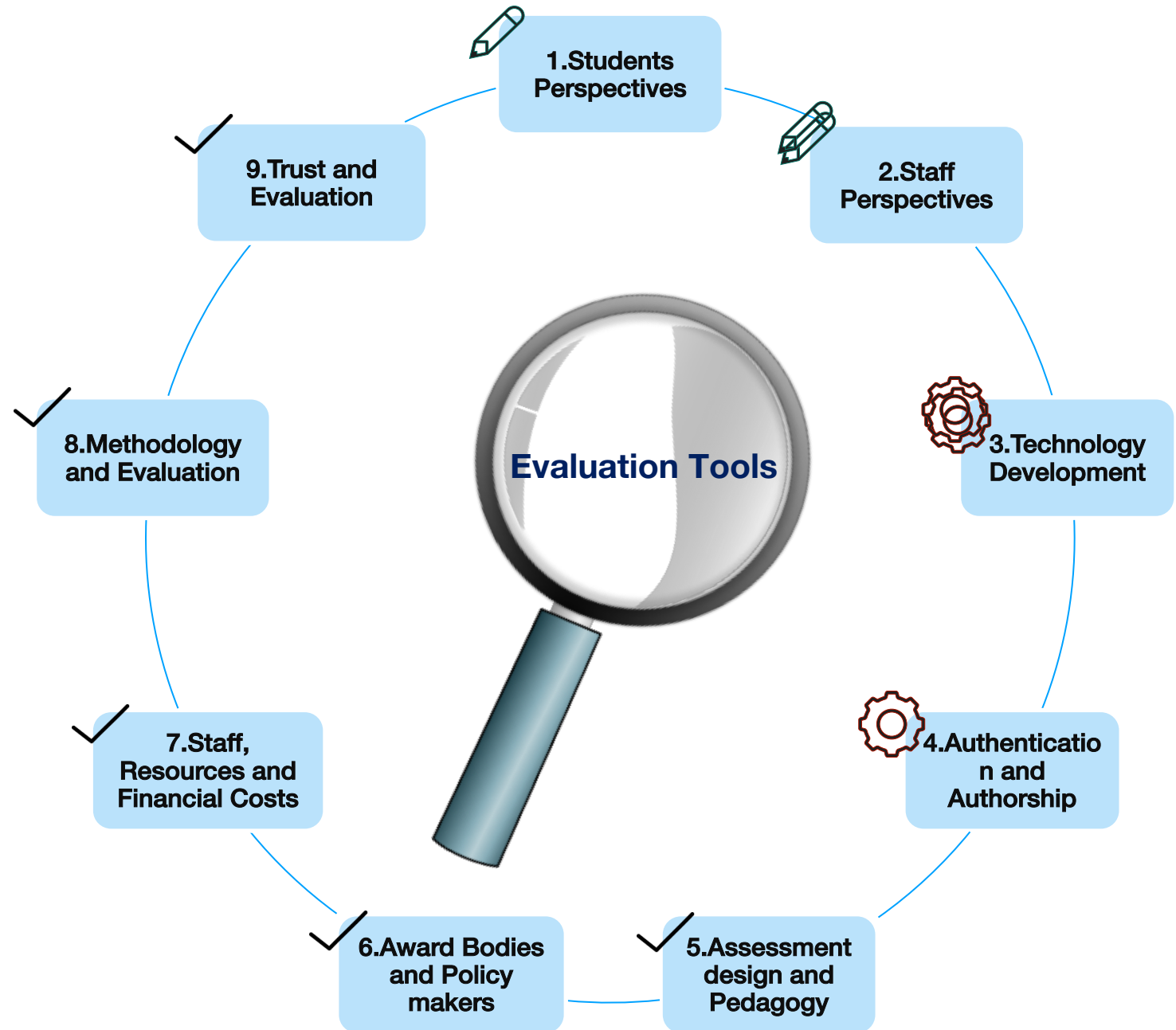
THE OPEN UNIVERSITY (UK)

- The largest open distance university in Europe
- ~170,000 students
- ~24,000 students with SEND
- One of the seven TeSLA pilot institutions
- TeSLA WP8 (Evaluation) lead



Evaluation Framework

-  Pre- and post- questionnaires
online templates
and focus group
-  Pilot leaders summary
and report
-  Technical team
summaries



PARTICIPANTS

**4,058
students**

**330
SEND
students**

**54
educators**

**7
universities**

PARTICIPANTS

**7 pilot
coordinators**

**7 technical
professionals**

**7
institutional
leaders**

PARTICIPANTS

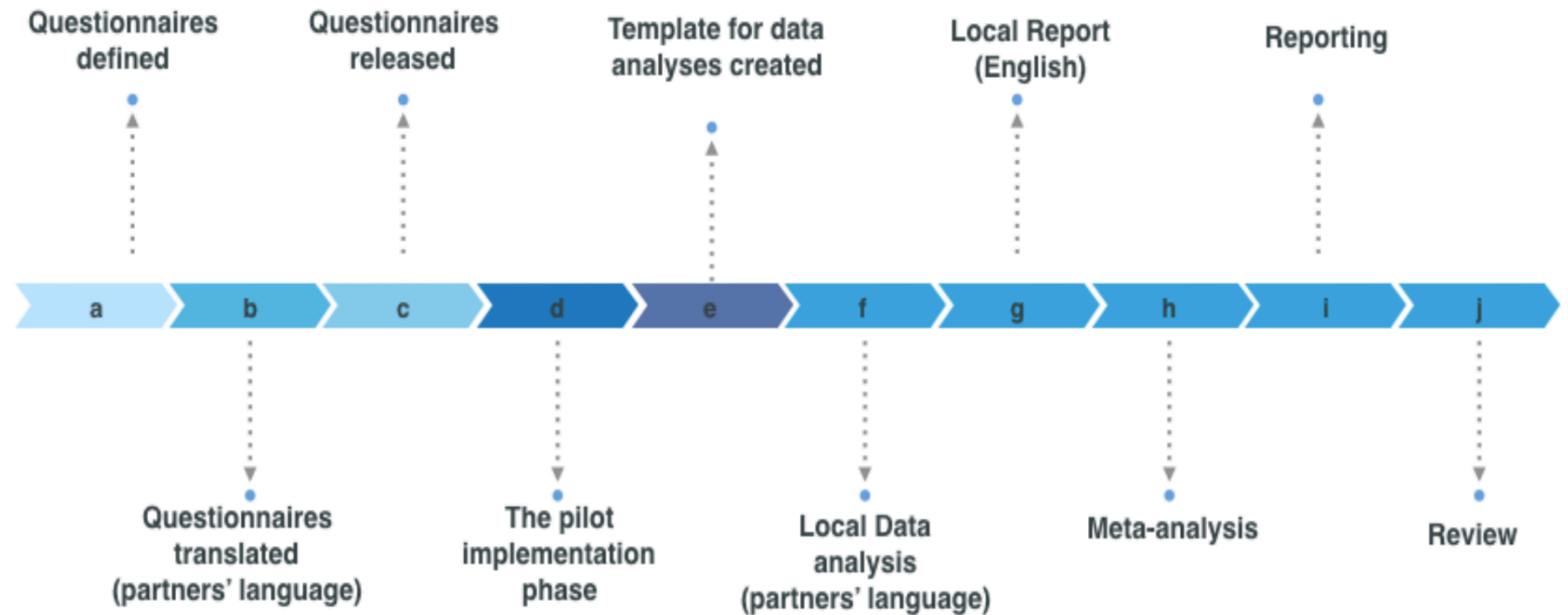
STUDENTS	AU	JYU	OUNL	OUUK	SU	TUS	UOC	TOTAL
Total of students to use TeSLA (unique participants)	2,325	1,844	417	1,617	1,457	1,574	1,868	11,102
Students who completed the pre-questionnaire (% of total)	240	167	84	853	232	783	1169	3528
	10%	9%	20%	53%	16%	50%	63%	32%
Students who completed the post-questionnaire (% of total)	171	115	57	574	226	452	627	2,222
	7%	6%	14%	35%	16%	29%	34%	20%

PARTICIPANTS

TEACHERS	AU	JYU	OUNL	OUUK	SU	TUS	UOC	TOTAL
Number of teachers who completed the pre-pilot questionnaire	9	9	10	5	4	13	57	107
Number of teachers who completed both the pre- & post- pilot questionnaires	8	8	3	4	4	6	34	67

Includes teaching staff with different roles, such as course designers, instructors, tutors, students' assessors and course coordinators. The majority were comfortable using technology.

PROCEDURE



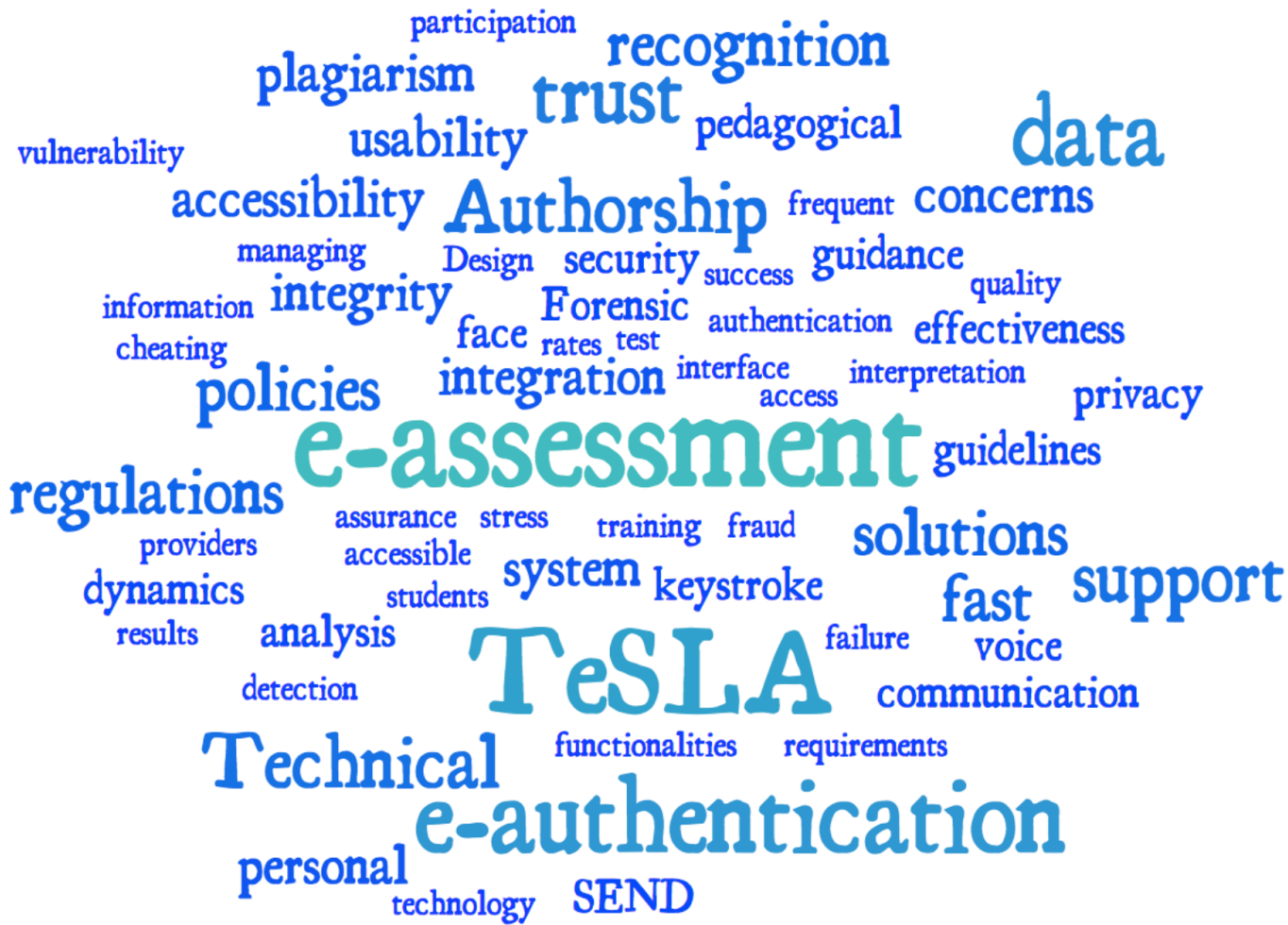
All partners used the BOS survey system with the same set of questions (translated into the local languages).

PILOT EVALUATION STUDIES

Key Evaluation Questions across themes

D8.6	KEY THEMATIC QUESTIONS
1. STUDENT PERSPECTIVES	What are students' perceptions on cheating & plagiarism, pros & cons on e-authentication systems and TeSLA tools? How about SEND?
2. STAFF PERSPECTIVES	What are educators' views on TeSLA interface and students' experience? What are the managers' opinions about integration, scalability and policy?
3. TECHNOLOGY DEVELOPMENT	What are the technical team' views on TeSLA vulnerabilities, stress tests, technical failures, accessibility, quality assurance, data & system integration?
4. EFFECTIVENESS OF THE AUTHENTICATION AND AUTHORSHIP	How effective is TeSLA system in authentication (successful and failed attempts; inauthentic and inappropriate uses; disruption and delays;...)?
5. ASSESSMENT DESIGN AND PEDAGOGY	How engaged are teachers and managers with TeSLA system, including assessment design, teaching, training and support ?
6. AWARD BODIES and POLICY MAKERS	Does TeSLA contribute to and support national education policy and social aspirations?
7. STAFF, RESOURCE and FINANCIAL COSTS	What was the technological readiness of staff? How much does assessment cost at present?
8. METHODOLOGY and EVALUATION	What are the issues related to data collection and analysis, students' consent, SEND participation ?
9. TRUST and EVALUATION	Do users feel informed, comfortable and confident with the TeSLA system? why students do not participate or drop out?

Students



OUTCOMES

Students

The overall experience with the TeSLA instruments was **positive for more than 50%** of the students from all partner universities.

More than 70% of participating students considered the **key advantages** of e-assessment with e-authentication to be: *“to ensure that my examination results are trusted”* and *“to prove that my essay is my own original work”*.

OUTCOMES

Students

The **most popular TeSLA** instruments for students were *Forensic Analysis* and *Anti-Plagiarism*.

Students found these instruments **less intrusive**.

In addition, **less time was required** for their use.

OUTCOMES

Students

Many students said that the e-authentication would **increase trust** in e-assessment for students, institutions and employees.

The most popular reasons given included: e-authentication would make it **more difficult for students to cheat**.

35% of students did not understand how the TeSLA system e-authenticated their identities and checked their authorship.

OUTCOMES

Students

- *“Reliable and fair evaluation.”*
- *“Location and time independence.”*
- *“Proves the authenticity of the work.”*
- *“Less stressful and more adapted to my mental problems.”*
- *“To not have to travel to an examination centre and avoid all the associated logistics, (transport, time off, childcare, school pick-up, etc.).”*
- *“To avoid to move to a place to perform the face-to-face exam.”*
- *“To help SEND students (reduced mobility).”*
- *“Less stressful.”*

OUTCOMES

Students

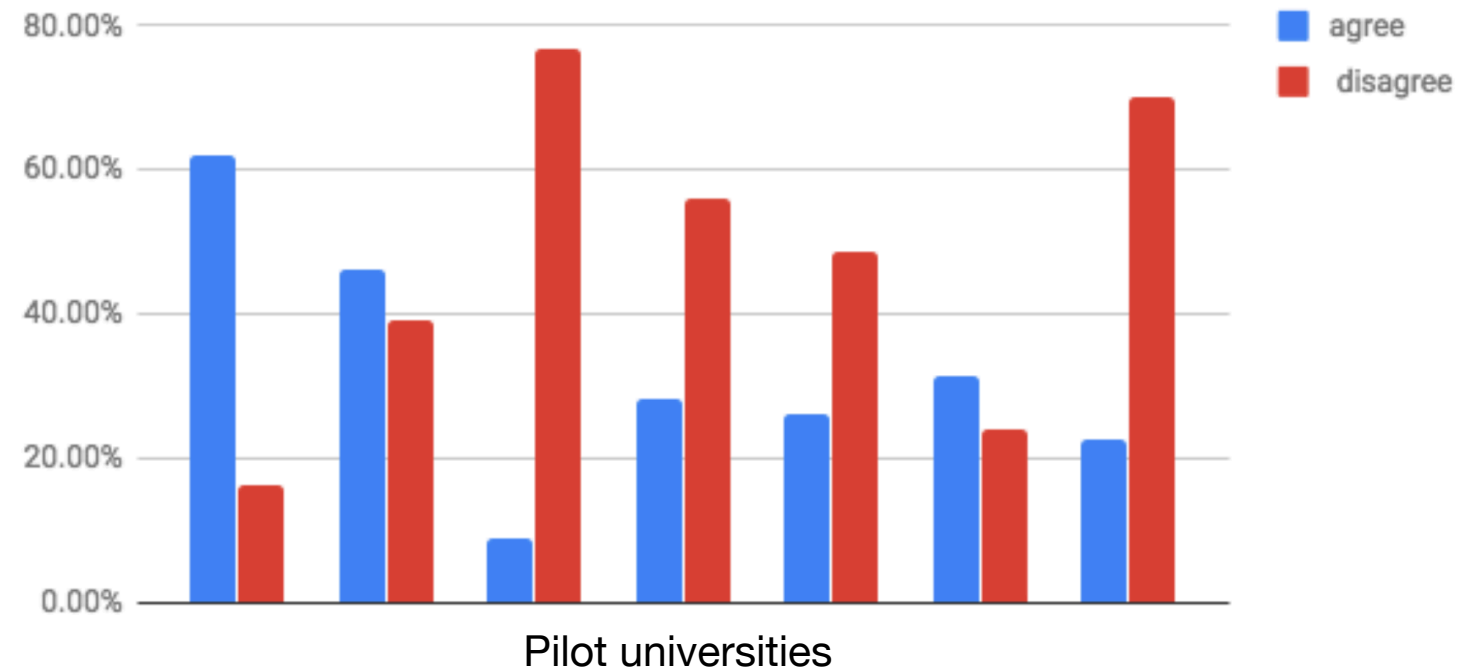
Around 40% of students were not sure about the details of cheating or plagiarism.

Many students are not properly aware of the consequences of plagiarism, how to use sources appropriately, reasons for not cheating, how to undertake collaborative work without cheating or plagiarism.

OUTCOMES

Students

“Copying and pasting a paragraph from an academic paper into my assignment and crediting the original source is plagiarism (a type of cheating)”.



OUTCOMES

Students

Very low numbers of students who are willing to share personal data (such as face images or voice).

Students who are **not willing to share any type of personal data** was as low as 30%.

This highlights the need to investigate students' resistance and to provide them with more clarification about data privacy and security.

OUTCOMES

Students

FACE RECOGNITION

50% of participants considered face recognition not intrusive. They were comfortable with it, and willing to use it again.

VOICE RECOGNITION

50%-60% of participants were comfortable with using voice recognition, and were willing to use it again. However, a small number (<20%) did find voice recognition a little intrusive.

OUTCOMES

Students

KEYSTROKE DYNAMICS

More than 70% of participants were comfortable with using keystroke dynamics, and were willing to use it again.

FORENSIC ANALYSIS

Around 70% of participants were comfortable using forensic analysis, and were willing to use it again.

OUTCOMES

Students

ANTI PLAGIARISM

Around 70% of participants were comfortable using anti-plagiarism, and were willing to use it again.

ALL TESLA TOOLS

There were interesting differences between the students in different countries (although the differences were not statistically significant).

OUTCOMES

Students

“I feel uneasy about showing my face or facilitating my fingerprint. It is effortless to spread such type of data.” (UOC)

“To be brutally honest, personal data sharing is never a good feeling.” (TUS)

“If it is offered to students, it means the information is protected well enough and cannot be breached so easily.” (SU)

It is not clear for me who will have access to my data, how will it be used and how will it be protected.” (OUUK)

“I trust the OU and expect that my data will be carefully processed, especially, when it is scientific research.” (OUNL)

“I didn't find testing unsecure or suspicious, because University was behind this.” (JYU)

“It is quite reliable since it is an application conducted by the university.” (AU)

OUTCOMES

Teaching staff

Teaching staff were **satisfied or very satisfied** with the TeSLA experience (particularly TUS 70% and SU 100%).

Most teaching staff agreed that the use of TeSLA *“will increase trust of e-assessment among universities and employers”* and *“it will help participants trust the outcomes of e-assessment”*.

OUTCOMES

Teaching staff

Teaching staff suggested that further **improvements** (ease of implementation, interoperability, graphical user interface, browsers and OS compatibility) would be welcome.

Most teaching staff agreed that **good technical support** was important.

OUTCOMES

Teaching staff

Teaching staff said that e-authentication made **new types of assessments** possible for the first time.

They also said that the e-authentication helped increase their trust of e-assessment, by **reducing cheating and plagiarism.**

OUTCOMES

Teaching staff

Almost all the participating teachers would **recommend TeSLA to a colleague** and would be **willing to adopt it** in their institution (those who wouldn't were only concerned about the technical implementation of the prototype system in their institutions' existing systems).

OUTCOMES

Teaching staff

Teacher requirements were for a **user-friendly** system, **usable** product, **well-documented** references, **information** about how the tools work and **guidelines for interpreting results** and detecting cheating.

OUTCOMES

Teaching staff

“Students don’t want to write too personal things about themselves, if they know that it will be saved for e-authentication purposes. So, when designing e-assessment task, this should be taken into account.” (JYU)

“Fewer students asked questions about data protection compared to the previous system, as they are more aware of TeSLA.” (OUUK)

RECOMMENDATIONS

FOR STUDENTS

Institutions need to **clarify** academic malpractices (plagiarism and cheating) and provide more explanations to foster academic integrity.

Institutions need to **promote discussion** about data security and privacy with students, to increase their willingness to share personal data.

Institutions **cannot assume**, because they are trusted, that students will readily accept these technologies – **Layers of trust**

RECOMMENDATIONS

FOR TEACHING STAFF

Institutions need to provide teaching staff with in-time technical support and pedagogical guidance and information about how to interpret the authentication results.

Institutions need to design strategies for involving greater numbers of teaching staff.

RECOMMENDATIONS

FOR TECHNICAL TEAMS

Technical teams need to be prepared to solve problems related to technical failure, vulnerability, stress testing, accessibility and usability, quality assurance, and system integration.

Technical teams need to provide practical guidelines about the functionalities of the system.



“Preventing cheating is a good thing. Even though you’re honest yourself, there's no guarantee that others are.” (Student)

“I definitely do not feel anxiety over these kinds of measures. I think they are a normal part of information security and confidential data transmission.” (Teacher)

THANK YOU